



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,759	07/09/2003	Kee Yean Ng	70021175-1	2290
57299	7590	04/02/2008		
Kathy Manke Avago Technologies Limited 4380 Ziegler Road Fort Collins, CO 80525			EXAMINER REAMES, MATTHEW L	
			ART UNIT 2891	PAPER NUMBER
			NOTIFICATION DATE 04/02/2008	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

avagoip@system.foundationip.com
kathy.manke@avagotech.com
adrienne.barclay@avagotech.com

Office Action Summary	Application No. 10/616,759	Applicant(s) NG ET AL.	
	Examiner MATTHEW L. REAMES	Art Unit 2891	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7 and 18-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7 and 18-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 7, 18-24 are objected to because of the following informalities: claims 7, 22, 24 recite "performed transparent cap" it is understood this should be preformed. Appropriate correction is required.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claim 7, 21, 22, 24, 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawae (previously cited).

- a. As to claim 7, 21 Kawae teaches mounting a chip having a primary light source on a substrate, said primary light source emitting light of a first wavelength (see e.g. fig. 9). Connecting power terminal on said chip to corresponding power terminals on said substrate for powering said light source (see e.g. fig. 9). and mounting a preformed transparent cap over said chip, said cap comprising a wavelength converting material for converting a portion of said

first wavelength to a second wavelength, wherein the said transparent cap comprises a spherical surface and has a constant thickness (see e.g. fig. 9 and paragraph 59). Wherein the phosphor is inherently soluble. Kawae teaches the phosphors are suspended in a clear material (see e.g. fig. 9).

b. As to claim 19, Kawae teaches an LED.

c. As to claim,24 Kawae teaches a uniform planar cap (see e.g. fig. 8).

d. As to claim 23, Kawae teaches a LED placed in an inverted cavity (reflector cup) (see e.g. fig. 10).

2. Claims 7,18-21,23-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Ibbetson (US 20050093430).

a. Ibbetson teaches encapsulating laser and LEDs (paragraph 35) with a soluble phosphor suspended in a uniform thickness cap (see e.g. item 38). Ibbetson teaches where the cap maybe planar or spherical (see e.g. figs). Ibbetson teaches a glass material (see claim 7). Further, Ibbetson teaches the use of a inverted cavity with the light emitter positioned in the cavity (see e.g. figs).

3. Claim 24 rejected under 35 U.S.C. 102(e) as being anticipated by Shiiki (previously cited).

a. It is noted claim 24 is substantially identical to claim 8 in the amendment dated 12/16/2004, which was rejected in the office action 3/9/2005 and subsequently cancelled in the amendment of 6/2/2005.

Therefore since applicant has never overcome this rejection the rejection is reinstated. Shiiki teaches the all the elements of claim 24. Further it is noted since element 5 is a layer it is being reasonably interpreted as having a constant thickness since Shiiki teaches no optical shaping done by the element..

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 18,20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawae in view of Lin (previously cited).

a. As to claim 18, Kawae does not teach glass.

Lin teaches a glass encapsulant.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have used a glass encapsulant of Lin to create the phosphor cap of Kawae.

One would have been so motivated in order to provide a durable cap, and further glass would have been desired for its optical properties.

b. As to claim 20, Kawae teaches an LED does not explicitly teach a laser diode.

Lin teaches encapsulating laser.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have encapsulated lasers using the method of Kawae.

One would have been so motivated in order to provide a cover at a reduced cost for lasers as well as LED (see paragraph 5).

6. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shiiki.

a. It is noted claim 22 is substantially identical to claim 5 in the amendment dated 12/16/2004, which was rejected in the office action 3/9/2005 and subsequently cancelled in the amendment of 6/2/2005.

Therefore since applicant has never overcome this rejection the rejection is reinstated. Shiiki teaches the all the elements of claim 22.

Shiiki does not explicitly teach a single crystal phosphor however it would have been obvious to one of ordinary skill in the art at the time of the invention to have replace the phosphor with single crystal phosphor of say YAG:Ce.

7. Claim 22 and 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reeh (2001/0000622) in view of Gueller-Mach (6,630,691).

a. As to claims 22 and 24, Reeh teach mounting a chip on a substrate, connecting power terminals to the chip and mounting a transparent cap over with a down converter (see e.g. fig. 6).

Reeh is silent in regards to the thickness however recites a lens on the down converter layer 6.

Therefore assuming *arguendo* one must interpret the reference so narrowly that a layer is not of uniform thickness.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have formed layer 6 of constant thickness in order to provide a flat surface for applying the lens increasing overall performance of the lens.

Reeh teaches YAG:Ce. Rech is silent in regards to whether it is single crystal.

Gueller Mach teaches a single crystal layer of YAG:Ce maybe used a phosphor (see e.g. abstract and item 10).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have formed layer 6 of Reeh using a layer of single crystal YAG:Ce. One would have been so motivated since it would have provided a long life device that allow uniform color control (see e.g. description of item 10).

Response to Arguments

8. Applicant's arguments filed 1/8/2008 have been fully considered but they are not persuasive. It is noted the amendment to claims 22 and 24 have changed the scope of these claims and applicant argument in regards to these claims are moot based on the current rejection.

9. Applicant has further argued neither Kawae nor Ibbetson teach a constant thickness cap. In fact, Ibbetson and Kawae both teach a constant thickness material as

cited in the body of the rejection by reciting the terms as “same,” “uniform,” and “consistent” thickness. For example:

Kawae describes the prior art figure 9 as:

Generally, LED has its directivity of emitted light wherein light intensity is varied depending on a beam spread angle, and in some case, luminous color is disadvantageously irregular between high and low light intensity directions when a light permeable **fluorescent cover with an entirely same thickness is attached on LED.**

In the discussion of element 38, Ibbetson recites:

Lens 36 includes an inside layer 38 with conversion particles 22 and an outside layer 40, **where layers 38 and 40 preferably have uniform thicknesses throughout.**

In further regard to the planar cap in claim 24, Ibbetson discusses figs 13 and 14:

Instead of having a lens, emitter 130 includes a phosphor loaded cap 136 having the same basic shape as LED 152 and, preferably, having **a generally consistent thickness.**

Ibbetson further teaches a planar sheet (see e.g. item 21). A sheet shall be interpreted as being uniform/constant thickness.

Applicant is reminded that “the description need not be in *ipsis verbis* [i.e., “in the same words”] to be sufficient”) (see, e.g., *Vas-Cath*, 935 F.2d at 1563, 19 USPQ2d at 1116; *Martin v. Johnson*, 454 F.2d 746, 751, 172 USPQ 391, 395 (CCPA 1972)).

Therefore since same consistent and uniform have the same meaning as constant all rejections are deemed proper and maintained.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW L. REAMES whose telephone number is (571)272-2408. The examiner can normally be reached on M-Th 6:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, B. William Baumeister can be reached on (571)272-1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2891

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MLR

/BRADLEY W BAUMEISTER/

Supervisory Patent Examiner, Art Unit 2891